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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.             | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------------|------------------|
| 10/628,477  | 07/29/2003  | Takahiro Aoki        | 1614.1351                       | 4692             |
| 21171   | 7590        | 09/14/2009           |                                 |                  |
| STAAS & HALSEY LLP<br>SUITE 700<br>1201 NEW YORK AVENUE, N.W.<br>WASHINGTON, DC 20005 |             |                      | EXAMINER<br>LIEW, ALEX KOK SOON |                  |
|   |             |                      | ART UNIT                        | PAPER NUMBER     |
|   |             |                      | 2624                            |                  |
|   |             |                      | MAIL DATE                       | DELIVERY MODE    |
|   |             |                      | 09/14/2009                      | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/628,477

**Applicant(s)**

AOKI ET AL.

**Examiner**

ALEX LIEW

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

1. The amendment filed on 6/3/09 is entered and made of record.

2. **Response to Applicant's Arguments**

On page 5 of the reply, the applicant stated:

"However, the visible light source 16 must illuminate both the object and the background as the second object, while the infrared light source 18 must illuminate only the background as the second object. In other words, Smoot requires the light sources 16 and 18 must always have a predetermined positional relationship with respect to the object and the background, in order for the visible light source 16 to illuminate both the object and the background as the second object, and for the infrared light source 18 to illuminate only the background as the second object."

The cameras in Smoot (US pat no ), both using the infrared and visible light, illuminate the foreground object shown in figure 1, elements 20 and 24, with infrared optical filter, 29 used for 24.

On page 6 of the reply, the applicant stated:

"So in Smoot the first object is not illuminated by the second light source 18. In addition, Smoot column 4, lines 6-7 provides "One or more second wavelength spectrum light sources 18 illuminate only the second object 14," so the first object is not illuminated by the second light source 18. The Examiner Interview Summary of November 10, 2009 also relies upon Smoot column 4, lines 5-58 and FIG. 3, however, this description clearly identifies the 2<sup>nd</sup> object 14 or background being illuminated by the second light source 18 and the 1st object 12 not being illuminated by the second light source 18 (i.e.,

all areas of the scene that are not illuminated with IR are the darker areas including the 1<sup>st</sup> object 12). In contrast to Smoot, the language of claim 1 requires picking up an image of *the object* using both of wavelengths in *a visible light region* and in *an infrared region*."

Elements 16 and 18 in figure 1 of Smoot are light sources only, not cameras. The language in claim 1 is: a first image pickup step to pick up an image of an object positioned in front of a background using wavelengths in a visible light region; a second image pickup step to pick an image of the object positioned in front of the background using wavelengths in an infrared region; in figure 1, cameras 20 and 24 uses visible and infrared lighting, respectively. Also on column 4, lines 52-58, Smooth discusses "all areas of the scene illuminated with IR ..." which includes the foreground object.

In an updated search the examiner found following references to read on the current invention: Monjo (US pat no 6,490,006) and Arai (US pat no 5,258,275). Details discussed below

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monjo (US pat no 6,490,006) in view of Arai (US pat no 5,258,275) and Smoot (US pat no 5,940,139).

With regards to claim 1, Monjo discloses a method of extracting an object from an image, comprising:

a first image pickup step to pick up an image of an object positioned in front of a background using wavelengths in the visible region (figure 2, element 3 is the camera with lighting controller 5); and

extracting only image of the object based on the images picked up by the first and second image pickup step (see figure 1, only the object is extracted, so the object can be added with the background image 20), wherein a surface of the background is formed by color lighting (see figure 1, 8 with lightings 2).

Monjo does not disclose using a background with organic dye. Arai suggests using *light-sensitive* materials applied with a matting agent, such as silver, onto the surfaces (see column 1, lines 50-68). One skilled in the art would include a background surface with dye because differentiate between the background with the foreground, improving recognition process.

Arai also revealed such dye is sensitive to infrared illumination (see column 6, line 50-52), but does not discloses an infrared camera.

Smoot discloses a first image pickup step to pick up an image of an object positioned in front of a background using wavelengths in a visible light region; a second image pickup

step to pick an image of the object positioned in front of the background using wavelengths in an infrared region (see figure 1, elements 20 and 24). One skilled in the art would include two cameras in the visible and infrared light spectrum because to cut out the foreground with simple subtraction process, improving saving processing time.

With regards to claim 2, see the rationale for claim 1.

With regards to claims 3 and 4, Arai discloses dye color is silver and made up of cyanine organic dye (see column 6, line 50-52).

With regards to claims 5 and 10, see the rationale for claim 1.

With regards to claim 6, see the rationale for claim 1.

With regards to claims 8 and 9, see the rationale for claims 3 and 4.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Monjo '006 in view of Arai '275 and Smoot '139 as applied to claim 1 further in view of Okazaki (US pat no 6,873,713).

With regards to claim 7, see the rationale and rejection for claim 1. In addition, Okazaki discloses a matching section to compare the image extracted by the extracting section

and registered object images and to output a result of comparison as an authentication result (see column 3, lines 19 to 33, a plurality of images are taken from different views, the first image taken is read as the image taken from first imager and second image taken is read as the image taken from second imager, the average brightness is compared between the first, second and to the registered image). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include a matching section because to identify the individual to prevent trespassers from entering any secure facility to improve security.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX LIEW whose telephone number is (571)272-8623 or cell (917)763-1192. The examiner can be reached anytime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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9/10/09